

Second, I claim in wheel vehicles the arrangement of the bolster, A, truss rods, F, center frame or part, G, outer bearing frames, E, of its equivalent and a rotating arm, C, carrying a wheel rigidly connected, substantially as and for the purpose herein set forth.

Third, I claim in wheel vehicles having a rotating arm, C, rigidly connected with the wheel, B, the within described and represented arrangement of the springs, s and h, and guiding pin, I, relatively to the bolster, A, hole, J, and box, D, or their equivalents for the purpose set forth.

Fourth, I claim in wheel vehicles the within-described arrangement of the rotating arm, C, parts, k, k, and trunnions, l, l, relatively to the levers, r, r, frame, m, and block, G, or their respective equivalents for the purpose above set forth.

DESIGNS.

- 1,792.—Plate of a Stove.—John D. Flansburgh (assignor to North, Chase & North), Philadelphia, Pa.
- 1,793, 1,794, 1,795.—Cook's Stove (3 cases).—Garretson Smith & Henry Brown (assignors to North, Chase & North), Philadelphia, Pa.

IMPORTANT TO INVENTORS  
PATENTS FOR SEVENTEEN YEARS.

MESSRS. MUNN & CO., PROPRIETORS OF THE SCIENTIFIC AMERICAN, continue to solicit patents in the United States and all foreign countries, on the most reasonable terms. They also attend to various other departments of business pertaining to patents, such as Extensions, Appeals before the United States Court, Interferences, Opinions relative to infringements, &c. The long experience Messrs. MUNN & Co. have had in preparing Specifications and Drawings, has rendered them perfectly conversant with the mode of doing business at the United States Patent Office, and with the greater part of the inventions which have been patented. Information concerning the patentability of inventions is freely given, without charge, on sending a model or drawing and description to this office.



Persons having conceived an idea which they think may be patentable, are advised to make a sketch or model of their invention, and submit it to us, with a full description, for advice. The points of novelty are carefully examined, and a written reply, corresponding with the facts, is promptly sent free of charge. Address MUNN & CO., No. 37 Park Row, New York.

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PRELIMINARY EXAMINATIONS AT THE PATENT OFFICE.

The service we render gratuitously upon examining an invention does not extend to a search at the Patent Office, to see if a like invention has been presented there, but is an opinion based upon what knowledge we may acquire of a similar invention from the records in our Home Office. But for a fee of \$5, accompanied with a model or drawing and description, we have a special search made at the United States Patent Office, and a report setting forth the prospects of obtaining a patent, &c., made up and mailed to the inventor, with a pamphlet, giving instructions for further proceedings. These preliminary examinations are made through our Branch Office, corner of F and Seventh streets, Washington, by experienced and competent persons. Many thousands such examinations have been made through this office. Address MUNN & CO., No. 37 Park Row, New York.

HOW TO MAKE AN APPLICATION FOR A PATENT.

Every applicant for a patent must furnish a model of his invention if susceptible of one; or, if the invention is a chemical production, he must furnish samples of the ingredients of which his composition consists, for the Patent Office. These should be securely packed, the inventor's name marked on them and sent, with the Government fees, by express. The express charge should be pre-paid. Small models from a distance can often be sent cheaper by mail. The safest way to remit money is by draft on New York, payable to the order of MUNN & CO. Persons who live in remote parts of the country can usually purchase drafts from their merchants on their New York correspondents; but, if not convenient to do so, there is but little risk in sending bank-bills by mail, having the letter registered by the postmaster. Address MUNN & CO., No. 37 Park Row, New York.

The revised Patent Laws, enacted by Congress on the 2d of March, 1861, are now in full force, and prove to be of great benefit to all parties who are concerned in new inventions.

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On filing each Caveat.....	\$10
On filing each application for a Patent, except for a design.....	\$15
On issuing each original Patent.....	\$20
On appeal to Commissioner of Patents.....	\$20
On application for Re-issuance.....	\$30
On application for Extension of Patent.....	\$50
On granting the Extension.....	\$50
On filing a Disclaimer.....	\$10
On filing application for Design, three and a half years.....	\$10
On filing application for Design, seven years.....	\$15
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The law abolishes discrimination in fees required of foreigners, excepting natives of such countries as discriminate against citizens of the United States—thus allowing Austrian, French, Belgian, English, Russian, Spanish and all other foreigners except the Canadians, to enjoy all the privileges of our patent system (but in cases of designs) on the above terms. Foreigners cannot secure their inventions by filing a caveat; to citizens only is this privilege accorded.

During the last seventeen years, the business of procuring Patents for new inventions in the United States and all foreign countries has been conducted by Messrs. MUNN & CO., in connection with the publication of the SCIENTIFIC AMERICAN; and as an evidence of the confidence reposed in our Agency by the inventors throughout the country, we would state that we have acted as agents for at least TWENTY THOUSAND inventors! In fact, the publishers of this paper have become identified with the whole brotherhood of inventors and patentees at home and abroad. Thousands of inventors for whom we have taken out patents have addressed to us most flattering testimonials for the services we have rendered them, and the wealth which has inured to the inventors whose patents were secured through this office, and afterward illustrated in the SCIENTIFIC AMERICAN, would amount to many millions of dollars! We would state that we never had a more efficient corps of Draughtsmen and Specification Writers than are employed at present in our extensive offices, and we are prepared to attend to patent business of all kinds in the quickest time and on the most liberal terms.

REJECTED APPLICATIONS.

We are prepared to undertake the investigation and prosecution of rejected cases on reasonable terms. The close proximity of our Washington Agency to the Patent Office affords us rare opportunities for the examination and comparison of references, models, drawings, documents, &c. Our success in the prosecution of rejected cases has been very great. The principal portion of our charge is generally left dependent upon the final result.

All persons having rejected cases which they desire to have prosecuted are invited to correspond with us on the subject, giving a brief story of the case, inclosing the official letters, &c.

CAVEATS.

Persons desiring to file a caveat can have the papers prepared in the shortest time by sending a sketch and description of the invention to the Government fee for a caveat, under the new law, is \$10. A pamphlet of advice regarding applications for patents and caveats, printed in English and German, is furnished gratis on application by mail. Address MUNN & CO., No. 37 Park Row, New York.

FOREIGN PATENTS.

We are very extensively engaged in the preparation and securing of patents in the various European countries. For the transaction of this business we have offices at Nos. 66 Chancery Lane, London; 29 Boulevard St. Martin, Paris; and 26 Rue des Eperonniers, Brussels. We think we can safely say that THREE-FOURTHS of all the European Patents secured to American citizens are procured through the Scientific American Patent Agency, No. 37 Park Row, New York. Inventors will do well to bear in mind that the English law does not limit the issue of patents to inventors. Any one can take out a patent there.

Circulars of information concerning the proper course to be pursued in obtaining patents in foreign countries through our Agency, the requirements of different Government Patent Offices, &c., may be had gratis upon application at our principal office, No. 37 Park Row, New York, or any of our branch offices.

ASSIGNMENTS OF PATENTS.

Assignments of patents, and agreements between patentees and manufacturers are carefully prepared and placed on the records at the Patent Office. Address MUNN & CO., at the Scientific American Patent Agency, No. 37 Park Row, New York.

It would require many columns to detail all the ways in which inventors or patentees may be served at our offices. We cordially invite all who have anything to do with Patent property or inventions to call at our extensive offices, No. 37 Park Row, New York, where any questions regarding the rights of patentees will be cheerfully answered.

Communications and remittances by mail, and models by express (prepaid), should be addressed to MUNN & CO., No. 37 Park Row, New York.

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RECEIPTS.—When money is paid at the office for subscriptions, a receipt for it will always be given; but when subscribers remit their money by mail, they may consider the arrival of the first paper a *bona fide* acknowledgment of our reception of their funds.

PATENT CLAIMS.—Persons desiring the claim of any invention which has been patented within thirty years, can obtain a copy by addressing a note to this office, stating the name of the patentee and date of patent, when known and inclosing \$1 as fee for copying. We can also furnish a sketch of any patented machine issued since 1863, to accompany the claim, on receipt of \$2. Address MUNN & CO., Patent Solicitors, No. 37 Park Row, New York.

Models are required to accompany applications for Patents under the new law, the same as formerly, except on design patents when two good drawings are all that is required to accompany the petition, specification and oath, except the Government fee.

INVARIABLE RULE.—It is an established rule of this office to stop sending the paper when the time for which it was pre-paid has expired.

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Binding the "Scientific American"

It is important that all works of reference should be well bound. The SCIENTIFIC AMERICAN being the only publication in the country which records the doings of the United States Patent Office, it is preserved by a large class of its patrons, lawyers and others, for reference. Some complaints have been made that our past mode of binding in cloth is not serviceable, and a wish has been expressed that we would adopt the style of binding used on the old series, i. e., heavy board sides covered with marble paper, and morocco backs and corners. Believing that the latter style of binding will better please a large portion of our readers, we commenced on the expiration of Volume VII. to bind the sheets sent to us for the purpose in heavy board sides, covered with marble paper and leather backs and corners. The price of binding in the above style is 75 cents. We shall be unable hereafter to furnish covers to the trade, but will be happy to receive orders for binding at the publication office, 37 Park Row, New York.

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VOLUMES I., II., III., IV., V., VII. AND VIII. (NEW SERIES) complete (bound) may be had at this office and from periodical dealers. Price, bound, \$225 per volume, by mail, \$3—which include postage. Every mechanic, inventor or artisan in the United States should have a complete set of this publication for reference. Subscribers should not fail to preserve their numbers for binding. VOL. VI. is out, of print and cannot be supplied.



L. H. H., of Vt.—It is quite a common thing to make ice artificially, and several machines have been constructed to manufacture it upon a large scale. You will find one designed for this purpose illustrated on page 72, Vol. V. (new series) of the SCIENTIFIC AMERICAN, and another on page 256 of the same volume.

D. D. G., of Wis.—Zachariah Baker, of Erie, Ill., obtained a patent on Oct. 14, 1862, for the use of oats and barley with salt in a bath combined with smart weed, oxalic acid, kino, catechu, red sanders, &c., for tanning leather. We have never seen any leather that was made by this process and cannot, therefore, pass an opinion upon its merits.

A. P., of N. Y.—Alfred Smees is Chemist to the Bank of England and resides in London. Electroplating batteries are manufactured by Messrs. Brothers, Center street, in this city. You can find all the information required about electroplating in Smees' *Electro-metallurgy*, except that which is derived by actual observation in witnessing the processes.

W. H. W., of N. Y.—The price for binding two volumes in one of the SCIENTIFIC AMERICAN is one dollar and twenty-five cents.

N. M., of Ind.—"Brewster's Optics" is the best scientific publication on the science. There is a very useful work on the "Uses and Abuses of Spectacles," published by Phillips, Sampson & Co., of Boston. There is also a very valuable treatise on the same subject, containing instructions respecting the use of lenses, by Alfred Smees, M. D., of London.

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S. B. W., of Ohio.—You will find the mode of constructing cone pulleys illustrated and described on page 34, Vol. I (new series) of the SCIENTIFIC AMERICAN.

Money Received

At the Scientific American Office, on account of Patent Office business, from Wednesday, July 1, to Wednesday, July 8, 1863:—

- J. B., of N. J., \$20; A. H. C., of Wis., \$20; G. R. B., of R. I., \$20; W. W., of N. H., \$20; O. N., of N. Y., \$20; J. J. M., of Conn., \$45; B. C. N., of Ill., \$10; T. R., of N. Y., \$20; H. M., of N. Y., \$17; H. and H. A. K., of Ohio, \$15; C. W., of Mass., \$25; C. G. M., of Vt., \$25; C. T. E., of Cal., \$21; J. S. C., of Kansas, \$20; H. C., of Cal., \$24; W. P. H., of Conn., \$20; L. C. W., of N. Y., \$10; J. M. M., of Mass., \$25; L. and G., of Pa., \$20; W. H. B., of Cal., \$20; K. and S., of N. Y., \$25; G. T., of N. Y., \$25; R. K., of Mass., \$50; H. H. E., of Conn., \$20; J. C., of Mass., \$20; J. C., of Va., \$25; Z. G. G., of N. Y., \$45; L. N. L., of Mass., \$40; R. G., of Conn., \$45; R. B. M., of Ohio, \$20; A. S., of N. Y., \$16; W. McC., of N. J., \$16; J. S. R., of Conn., \$10; C. H. R., of Maine, \$25; J. E. Van S., of Ky., \$30; P. M., of Ill., \$20; L. W., of Iowa, \$15; C. P. C., of Mass., \$15; T. P. R., of Mass., \$16; I. P. T., of N. Y., \$325; M. A. W., of Cal., \$31; H. W. C., of Vt., \$12; R. W. and D. D., of N. Y., \$25; E. and W., of Mass., \$20; W. M. D., of N. Y., \$20; H. W. M., of N. Y., \$20; R. S., of Ill., \$20; R. F. W., of N. Y., \$16; D. M., of Ind., \$20; E. D. M., of N. H., \$20; J. C., of R. I., \$15; J. C., of N. Y., \$25; G. M., of Ill., \$25; R. and R., of R. I., \$25; N. J., of N. Y., \$25; G. S. M., of Ill., \$9; A. W., of N. Y., \$25; B. F. H., of N. Y., \$16; J. B. S., of Ill., \$29; E. C. C. K., of Conn., \$16; S. F., of N. Y., \$25; E. A. S., of N. Y., \$25

Persons having remitted money to this office will please to examine the above list to see that their initials appear in it, and if they have not received an acknowledgment by mail, and their initials are not to be found in this list, they will please notify us immediately, and inform us the amount, and how it was sent, whether by mail or express.

Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent Office from Wednesday, July 1, to Wednesday, July 8, 1863:—

- R. K., of Mass.; G. T., of N. Y.; S. F., of N. Y.; J. B. S., of Ill.; C. H. R., of Maine; G. M., of Ill.; J. C., of N. Y.; C. W., of Mass.; R. W. and D. D., of N. Y.; A. V. R., of N. Y.; H. W. C., of Vt.; A. W., of N. Y.; C. G. M., of Vt.; N. J., of N. Y.; F. W. M., of Ky.; R. B. B., of N. Y.; E. A. S., of N. Y.; K. and S., of N. Y.; L. and G., of Pa.; J. M. M., of Mass.; H. C., of Cal.; R. R., of R. I.; M. and M., of Cal.; H. M., of N. Y.

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WAR DEPARTMENT.

PROVOST MARSHAL GENERAL'S OFFICE, WASHINGTON, June 30, 1863.

Section 13 of the act, approved March 3, 1862, for enrolling and calling out the national forces and for other purposes, is as follows:—

SECTION 13. And be it further enacted, That any person drafted and notified to appear as a recruit, may, on or before the day fixed for his appearance, furnish an acceptable substitute to take his place in the draft, or he may pay to such person as the Secretary of War may authorize to receive it, such sum, not exceeding three hundred dollars, as the Secretary may determine, for the procurement of such substitute, which sum shall be fixed at a uniform rate by a General Order made at the time of ordering a draft for any State or Territory...

It is hereby announced that the amount to be paid, in accordance with the foregoing section of the Enrollment act, by any person who may be drafted, in order to secure exemption from service, has been fixed by the Secretary of War at three hundred dollars.

The Commissioner of Internal Revenue in each Congressional District has authorized by the Secretary of War and directed by the Secretary of the Treasury, to receive from drafted persons, who desire to pay for the purpose of exemption, the money above specified. On receipt of this sum the Collector of Internal Revenue shall give the drafted person paying it duplicate receipts. One copy of these receipts shall be delivered to the Board of Enrollment on or before the day of the draft and person is required to report for duty and when so delivered to the board the drafted person shall be exempted by the Board with a certificate of exemption (Form 51, Regulations of Provost Marshal General's Bureau, stating that the person is disqualified from further military duty under that draft, by reason of having paid the sum of three hundred dollars.

The Provost Marshal shall make out, within the first Monday of every week, an list of persons to whom exemption from military service has been granted by the Board in the week previous. (Form 51.) All receipts or certificates of deposit delivered to the Board by persons claiming exemption on account of having paid the required sum of money, shall accompany the abstract.

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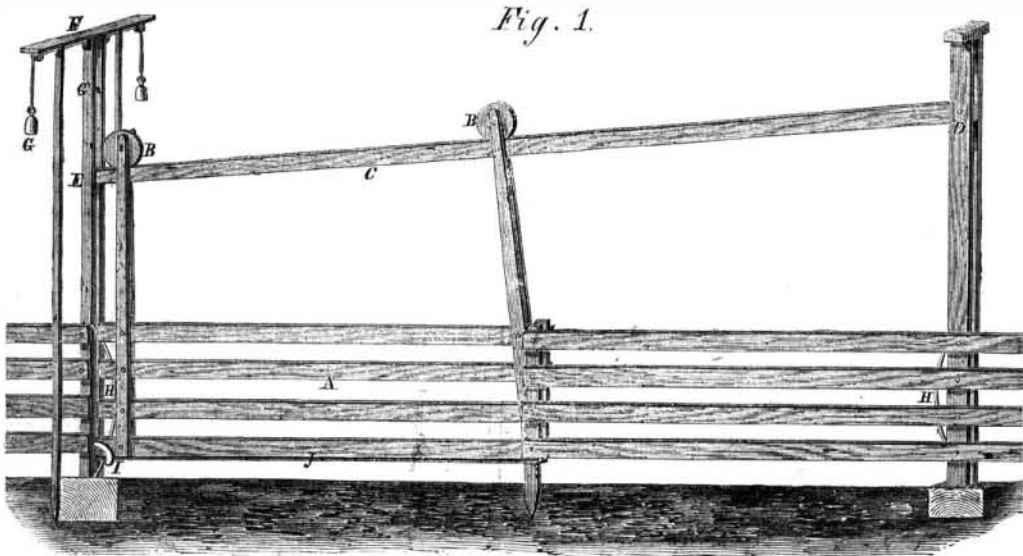
**Patent Self-acting Gate.**

It happens not unfrequently that farmers or others find themselves suddenly opposed in their progress over their premises by a heavy wooden gate, to open which they must get out of their vehicles before they can go further. This is not easily accomplished sometimes, as in the case of a restive horse; or when a young gentleman finds himself so completely engaged in conversation with his "cousin," that to descend and do so unromantic a thing as to open a gate would entirely destroy the thread of his discourse. To avoid this and similar inconveniences, the self-acting gate herewith illustrated, has been invented, and we can certify that it is a very conve-

The reverse of this operation is performed when the gate is to be closed; the rail is lowered from the shoulder on which it rests by the opposite cord, and the gate then descends by its gravity and completely stops the way. Fig. 3 shows the way in which the shoulder that the rail rests upon when the gate is open, is made, and Fig. 4, shows the manner in which the rail latches on the shoulder of the front post, and also on the pin, thereby gaining the full strength of all the parts. All the parts are easily operated by a child twelve years old, and the perishable materials, such as the cords (or chains when required), are sheltered from the weather and will last a long time. The cost of such a gate is, we are assured,

beneficial as a paint for iron. In the month of April last he inspected a well, 200 feet deep, a short distance out of London, where he had put up an engine forty-five years ago; the long iron rods which had been placed in it had been painted with red lead, and the metal had remained unchanged in all that period. The same preservative effects of red lead paint on iron he had witnessed upon other iron-work which had been many years in use.

The pay of the engineers on the blockade-runners is said to be \$1,500 per month. It is not stated whether the sum is paid in gold or Confederate money—if in the latter, their services are cheap enough!



**PIERCE'S PATENT AUTOMATIC GATE.**

nient arrangement, and will we think be generally appreciated by the public. Fig. 1, is an elevation of the gate, A; this is suspended on rollers, B, which run upon the upper rail, C. This rail is jointed at D, and moves freely at the further extremity between the uprights, E. These upright timbers have a plank, F, common to both, crossing their tops, on the underside of which the cords, G, running in rollers, are carried, and connected with the loose end of the rail. There are also two uprights under each end of the cross timber which brace the main uprights that can be used for a hitching post. The cords have weights depending from them which balance the rail, C, and there are also two shoulders, G', in Fig. 2, on which the free end of the rail rests

not above that of an ordinary one, and the advantages it presents over those not so constructed, it will be apparent to every one, make it actually cheaper than a cumbersome, slamming affair, that takes two men and a boy to swing on its hinges. This gate is the invention of James M. Pierce, of Mokena, Ill., and was patented through the Scientific American Patent Agency on April 28, 1863; further information can be had by addressing him at that place.

**RED LEAD FOR PROTECTING IRON.**

At a recent meeting of the Society of Arts, London, the question of preserving iron from rusting formed a subject of conversation, and important remarks were made by members, who stated that gal-



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The SCIENTIFIC AMERICAN is indispensable to every inventor, as it not only contains illustrated descriptions of nearly all the best inventions as they come, but each number contains an Official List of the Claims of all the Patents issued from the United States Patent Office during the week previous; thus giving a correct history of the progress of inventions in this country. We are also receiving, every week, the best scientific journals of Great Britain, France and Germany; thus placing in our possession all that is transpiring in mechanical science and art in those old countries. We shall continue to transfer to our columns copious extracts from those journals of what ever we may deem of interest to our readers.

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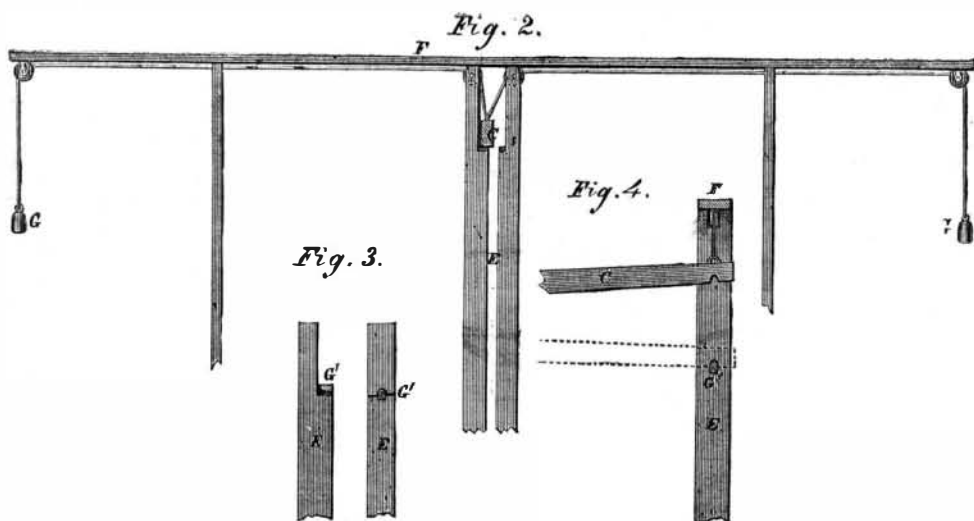
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FROM THE STEAM PRESS OF JOHN A. GRAY



when the gate is opened or closed. The springs, H, mitigate the shock of the gate when it closes, and the guide, I, is provided to insure the proper position of the gate at all times, and prevent it from being blown open by the wind. The lower side of the bottom rail is faced with a board, J, three inches wide, so that the gate will work freely between the posts when running back and forth. It will be seen that when the cords are pulled, the free end of the rail, C, will rise through the uprights and carry with it the gate; the latter will then be upon a plane inclining from the upright E to D, and will run down the same past the fence, and leave the passage clear.

vanized iron wire for telegraphs was not affected with rust in passing through rural districts, but the coating of zinc on the iron afforded no protection to wires in cities. The acid gas generated by the combustion of fuel attacked the gas and decomposed it. A new substitute for covering telegraphic wire was desirable.

With respect to paints for coating iron, such as the plates of iron vessels, machinery, &c., Mr. John Braithwaite stated that pure red lead was the best. His experience dated as far back as 1806, with the use of red lead, and for fifty years he had used it with success. White lead was more injurious than